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Agricultural Memorandum No 617

Variation of Potential Transpiration with height - statistical analysis

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The data in Ag. Mem. 145 was analysed as follows.

1. Double regression of summer PT totals against latitude and height above MSL for the following 'major' stations.

Acklington, Speke, Ringway, Shawbury, Watnall, Yarmouth, Mildenhall, Shoeburyness, Abingdon, Boscombe Down, South Farnborough, Plymouth, Valley, Aberporth and Scillies

Change with height = -0.33 in/100 ft.

Omitting Watnall, which has a low PT value partly due to smoke,

Change with height = -0.26 in/100 ft.

2. Adding five other stations, Huddersfield, Little Rissington, Harlech, Bovingdon and Lyneham, all higher (between 456 and 762 ft. above MSL) the result was

Change with height = -0.18 in/100 ft.

3. Taking all coastal stations in England and Wales, the result was

Change with height = -0.18 in/100 ft.

4. Taking all stations and extracting a triple regression against height, distance from S coast, and distance from nearest coast, the result was yet again

Change with height = -0.18 in/100 ft.

Bearing in mind that this is a mathematical solution (with a partial correlation of PT on height of about -0.7), it can only be concluded that a value of 0.2 in/100 ft. is not greatly misleading over the first 1000 ft.

Any comments or suggestions on this paper should be referred to the author.

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